

## FIG. 1

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-54 AGCTGCGGCCGGTCTGCGAGCCAGACCTTTGGAGAAGACCCACTCCCTGTTC
1 ATGGGCCCCCGCTGCACCTGCACCCCTTTCTCTCTGGTGAGGTGACAGCGCTGGCT 60
  M G P R C T L H P L S L L V Q V T A L A
61 GCGACTCTGGCCAGGGCAGGCTGCTGCTCTCTGCTGAGCTCCAGCCCCAAGGC 120
  A T L A Q G R L P A F L P C E L Q P H G
121 CTGGTGAAGTCAACTGGCTCTTCTGAAGTCCGTGCCCACTTCTGCGCGCAGCGCC 180
  L V N C N W L F L K S V P H F S A A A P
181 CGGGCCACGTCAACAGCTCTCTTACTTCCAAACGCATCCACACTTGCACGACTCT 240
  R A N V T S L S L L S N R I H H L H D S
241 GACTTCGTCCACTGTCCAGCTACGAAGCTCTCAAGTGAAGTGCCTGCGCGCGGT 300
  D F V H L S S L R T L N L K W N C P P A
301 GCGCTCAGCCCATGCACTTCCCTGCCACATGAACATGAGCCCAACACTTCTGCGC 360
  G L S P M H F P C H M T I E P N T F L A
361 GTGCCCACTGGAGGAGCTGAACCTGAGCTAACAGCATCAGACCGTGCCTGCGCTG 420
  V P T L E E L N L S Y N S I T T V P A L
421 CCGACTCCCTGCTGCTGCTGCTGAGCCACCAACATCTGCTGCTAGACCCACCC 480
  P D S L V S L S L S R T N I L V L D P T
481 CACCTCACTGGCTACATGCGCTGCGCTACCTGTACATGGATGGCAACTGCTACTACAAG 540
  H L T G L H A L R Y L Y M D G N C Y Y K
541 AACCCCTGCCAGGGGGCGCTGGAGGTGGTGCCGGTGCCTCTCGCGCTGCGCAACCTC 600
  N P C Q G A L E V V P G A L L G L G N L
601 ACACATCTCTCACTCAAGTACAACAATCTCAGGAGGTGCCCGCAGCTGCCCGCCAGC 660
  T H L S L K Y N N L T E V P R S L P P S
661 CTGAGACCTGCTGTTGTCTTACACCATTTGTCAACCTGACGCTGAGGAOCTGGCC 720
  L E T L L L S Y N H I V T L T P E D L A
721 AATCTGACTGCGCTGCGGTGCTTGATGTGGGGGGAACTGCCGCGCTGTGAACATGCC 780
  N L T A L R V L D V G G N C R R C D H A

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(SEQ ID NO:1 1-834)

(SEQ ID NO:2 1-260)

## FIG. 2

781 CGCAACCCTGCAGGGAGTGCCCAAAGGACCACCCCAAGCTGCACTCTGACACCTTCAGC 840  
R N P C R E C P K D H P K L H S D T F S  
841 CACCTGAGCGCCTCGAAGGCTGGTGTGAAAGACAGTTCTCTCTACAACTGGACGCC 900  
H L S R L E G L V L K D S S L Y N L D A  
901 AGGTGGTTCGAGGCTGGACAGGCTCCAAGTGCTGGACCTGAGTGAGAACTTCTCTAC 960  
R W F R G L D R L Q V L D L S E N F L Y  
961 GACTGCATACCAAGACCACGGCTTCCAGGGCTGGCCGACTgCGcAAGCTCAACCTG 1020  
D C I T K T T A F Q G L A R L R K L N L  
1021 TCCTTCAATTACCACAAGAAGGTGTCCTTTGCCCACTGCACTGGCACTCTCTTTGGG 1080  
S F N Y H K K V S F A H L H L A P S F G  
1081 CACCTCCGGTTCCTGAAGGAGCTGGACATGCATGGCATCTTCTTCGGCTGCTCAGTGAG 1140  
H L R S L K E L D M H G I F F R S L S E  
1141 ACCACGCTCCAACTCTGGTCCAAGTGCCTATGCTCCAGACCTGGCGCTGCAGATGAAC 1200  
T T L Q P L V Q L P M L Q T L R L Q M N  
1201 TTCATTAAACCAGGCCAGCTCAGCATCTTTGGGGCTTCCTTGGCTGCTGTGACGTGGAC 1260  
F I N Q A Q L S I F G A F P G L L Y V D  
1261 CTATCGGACAACCGCATCAGCGAGCTGCAAGGCCAGTGGcATTACTAGGGAGGTGGAT 1320  
L S D N R I S G A A R P V A I T R E V D  
1321 GGTAGGGAGAGGGTCTGGCTGGCTTCAGGAACCTGGCTCCAGCTCCACTGGCACTCTC 1380  
G R E R V W L P S R N L A P R P L D T L  
1381 CGCTCAGAGGACTTCATGCCAACTGCCAAGGCTTCAGCTTCACTTGGACCTGTCTCGG 1440  
R S E D F M P N C K A F S F T L D L S R  
1441 AACAACTGGTGACAATCCAGTGGGAGATGTTTGCTGGCTCTCAAGCCTCGAGTGGCTG 1500  
N N L V T I Q S E M F A R L S R L E C L  
1501 OGTCTGAGCCACACAGCATCTCCAGGGGGTCAATGGCTCTCAGTTTGTGCCGCTGAAC 1560  
(SEQ ID NO:1 835-1614)  
R L S H N S I S Q A V N G S Q F V P L T  
(SEQ ID NO:2 261-520)

## FIG. 3

1561 AGCCTGGGGTGTCTGGAOCTGTCCACAACAAGCTGGAOCTGTATCAGGGGCTCGTTC 1620  
S L R V L D L S H N K L D L Y H G R S F  
1621 ACGGAGCTGCCGGGCTGGAAGCACTGGAOCTCAGCTACAACAGCCAGCCCTTTACCATG 1680  
T E L P R L E A L D L S Y N S Q P F T M  
1681 CAGGGTGTGGGGCCAAAOCTCAGCTTGTGGCCAGCTGCCGGCCCTGCGCTAOCCTCAGC 1740  
Q G V G H N L S F V A Q L P A L R Y L S  
1741 CTGGGGCACAATGACATCCATAGCCGAGTGTCCAGCAGCTCTGTAGCCGCTCACTGTGC 1800  
L A H N D I H S R V S Q Q L C S A S L C  
1801 GCOCTGGACTTTAGCGGCAAGATCTGAGCCGATGTGGGCTGAGGGAGACCTCTATCTC 1860  
A L D F S G N D L S R M W A E G D L Y L  
1861 CGCTTCTTCCAAGGCTAAGAAGCCTAGTCTGGCTGGACCTGTCCAGAACCAOCTGCAC 1920  
R F F Q G L R S L V W L D L S Q N H L H  
1921 ACCCTOCTGCCAGGTGCCOCTGGACAACCTCCCAAGGCTGAAGCATCTGCATCTCOGT 1980  
T L L P R A L D N L P K S L K H L H L R  
1981 GACAATAACCTGGCCTTCTTCAACTGGAGCAGCCTGACCCCTOCTGCCAAGCTGGAACC 2040  
D N N L A F F N W S S L T L L P K L E T  
2041 CTGGACTTGGCTGGAACCAAGCTGAAGGCCAATGACAGCCTGCCATCTGGCAC 2100  
L D L A G N Q L K A L S N G S L P S G T  
2101 CAGCTGGGAGGCTGGAOCTCAGTGGCAACAGCATCGGCTTGTGAACCTGGCTTCTTT 2160  
Q L R R L D L S G N S I G F V N P G F F  
2161 GOCCTGGCAAGCAGTTAGAAGACCTCAOCTCAGGCCAATGCCCTCAAGACAGTGGAG 2220  
A L A K Q L E E L N L S A N A L K T V E  
2221 COCTOCTGTTTGGCTCGATGGTGGCAACCTGAAAGTCTAGACGTGAGGCCAACCT 2280  
P S W F G S M V G N L K V L D V S A N P  
2281 CTGCACTGGCCTGTGGGGGACCTTGTGGGCTTCTGCTGGAGGTACAGGCTGGCGGTG 2340  
L H C A C G A T F V G F L L E V Q A A V  
(SEQ ID NO:1 1615-2394)  
(SEQ ID NO:2 521-780)

## FIG. 4

2341 CCTGGGCTGCCAGCCGGTCAAGTGTGGCAGTCCGGGGCAGCTCCAGGGCCATAGCATC 2400  
 P G L P S R V K C G S P G Q L Q G H S I  
 2401 TTGGCGAAGACCTGGGCTCTGGCTGGATGAGACCTCTCGTGGAACTGTTTTGGCATC 2460  
 F A Q D L R L C L D E T L S W N C F G I  
 2461 TCGCTGCTGGCCATGGGCTGGGCTGGTTGTGGCCATGCTGCACCACTCTGGGGCTGG 2520  
S L L A M A L G L V V P M L H H L C G W  
 2521 GACCTCTGGTACTGCTTCCAACTGTGGCTGGGCTGGCCACCGAGGGCAGGGCGG 2580  
 D L W Y C F H L C L A W L P H R G Q R R  
 2581 GCGCAGACGCCCTGTCTATGATGCTTCTGGTCTTTGACAAAGCTCAGAGTGTCTGTG 2640  
 G A D A L F Y D A F V V F D K A Q S A V  
 2641 GCGACTGGGTGTACAACAGAGCTGGGGTGCAGCTGGAGGAGCGCGGTGGGCGCGCGCA 2700  
 A D W V Y N E L R V Q L E E R R G R R A  
 2701 CTGGGCTGTGCTTGGAGGAGGAGACTGGTTAOCCTGGCAAGACCTCTTCGAGAACCTG 2760  
 L R L C L E E R D W L P G K T L F E N L  
 2761 TGGGCTCAGTCTACAGCAGCCGCAAGACCTGTTTGTGCTGGCCACACGGACCGGTGC 2820  
 W A S V Y S S R K T L F V L A H T D R V  
 2821 AGCGGCTCTTTCGTGCCAGTTTCTGCTGGGCCAGCAGGCGCTGCTGGAGGACCGCAAG 2880  
 S G L L R A S F L L A Q Q R L L E D R K  
 2881 GACGTTGTAGTGTGGTGATCCTGGGCCCGATGCCCTACCGCTCCCGCTACGTGGCGCTG 2940  
 D V V V L V I L R P D A Y R S R Y V R L  
 2941 CCGCAGCGGCTCTGCCGCCAGAGTGTCTCCTCTGGCCCCACCAGCCCGTGGCGAGGGC 3000  
 R Q R L C R Q S V L L W P H Q P R G Q G  
 3001 AGCTTCTGGGCCAGCTGGGCACAGCCCTGACCAGGGACAACCGGCACCTTCTATAACCG 3060  
 S F W A Q L G T A L T R D N R H F Y N R  
 3061 AACTTCTGGCGGGGGCCACGACAGCCGAATAG 3093 (SEQ ID NO:1 2395-3147)  
 N E C R G P T T A E \* (SEQ ID NO:2 781-1030)

## FIG. 6

SWINE	1	MCPCT--LHPLSLLMQVTLAATLAQGRLPAPFLPCELOPHGLMNCWMLFLKSVPHFSAA	58	SWINE
HUMAN	1	MCP-CRSALHPLSLLMQAIMLAMITALGTLPAPFLPCELOPHGLMNCWMLFLKSVPHFSAA	59	HUMAN
MOUSE	1	MLPRT-LHPLSLLMQAVLAETLALGTLPAPFLPCELOPHGLMNCWMLFLKSVPHFSAA	59	MOUSE
CAT	1	MCP-CHGALHPLSLLMQAAALAVALAQGTLPAPFLPCELOPHGLMNCWMLFLKSVPHFSAA	59	CAT
		* . . ***** * * * * ***** * * * * * * * * *		
SWINE	59	APRANVTSLSLSNRIHHLHDSDFVHLSLRRLNKNCPAGLSPMHFPCHMITTEPTF	118	SWINE
HUMAN	60	APRQNTSLSLSNRIHHLHDSDFVHLSLRRLNKNCPVGLSPMHFPCHMITTEPTF	119	HUMAN
MOUSE	60	ASCNITRLSLSNRIHHLHDSDFVHLSLRRLNKNCPPTGLSPHFSCHMITTEPTF	119	MOUSE
CAT	60	APRQNTSLSLSNRIHHLHDSDFVHLSLRRLNKNCPASLSPMHFPCHMITTEPTF	119	CAT
		* . . * * * * * ***** * * * * * * * * * * * * * * *		
SWINE	119	LAVPTLEEIMLSYNSITTPALPDSLVLSLSRNTILVDPHTLGLHAIRLYMDGNCY	178	SWINE
HUMAN	120	LAVPTLEEIMLSYNTIMTPALPKSLISLSLHNTILMDGASLAGLHAIRTFMDGNCY	179	HUMAN
MOUSE	120	LAMPTLEEIMLSYNGITTPRIPSSLVLSLHNTILVDANSIAGLSIRVFMGNCY	179	MOUSE
CAT	120	LAVPTLEEIMLSYNSITTPALPSSLVLSLSRNTILVDPAMLAGLSIRVFLDGNCY	179	CAT
		* . . ***** * * * * * * * * * * * * * * * * * * *		
SWINE	179	YNPCQALEVPAGALLGLGNLTHLSKYNNLTVPPRSLPPSLETLLSNHIVTLTPED	238	SWINE
HUMAN	180	YNPCQALEVPAGALLGLGNLTHLSKYNNLTVPPNLPSSLEYLLSNRIVKLPED	239	HUMAN
MOUSE	180	YNPCTGAVKVTGALLGLGNLTHLSKYNNLTVPRQLPPSLEYLLSNIVKLPED	239	MOUSE
CAT	180	YNPCQALQVAPGALLGLGNLTHLSKYNNLTVPRGLPPSLEYLLSNHIVTLTPED	239	CAT
		***** *		
SWINE	239	LANLTALRVLDVGGNCRCDHARNPCRECPKDHPLHSDTFSHLSRLEGLVLDKSSLYNL	298	
		(SEQ ID NO:2 1-298)		
HUMAN	240	LANLTALRVLDVGGNCRCDHARNPCRECPKDHPLHSDTFSHLSRLEGLVLDKSSLYNL	299	
		(SEQ ID NO:4 1-299)		
MOUSE	240	LANLTSLRVLDVGGNCRCDHARNPCIEGQKSLHAPETPHLSHLEGLVLDKSSLYNL	299	
		(SEQ ID NO:6 1-299)		
CAT	240	LANLTALRVLDVGGNCRCDHARNPCRECPKDHPLHSDTFSHLSHLEGLVLDKSSLYNL	299	
		***** *		
		(SEQ ID NO:8 1-299)		

## FIG. 7

SWINE 299 DARMERGLDRLQVLDLSENFLYDCITKTTPAQGLARLRKINLSFNYHKKVSFAHLHLAPS 358  
HUMAN 300 NASWERGLQLRLVLDLSENFLYKCITKTTPAQGLTLRLKINLSFNYQKRVSFARHLSLAPS 359  
MOUSE 300 NSSWFERGLNLVLDLSENFLYESINHNAPQNLTLRLKINLSFNYRKKVSFARHLHLASS 359  
CAT 300 NRPWFHALGNLMLVLDLSENFLYDCITKTTPAQGLAQLRRINLSFNYHKKVSFAHLHLAPS 359  
\* \* \* \* \*  
SWINE 359 FGHRLSLKELDMHGIFFRSLSETTLQPLVQLPMLQTLRLQMFINQALSIQFAGFPGLLY 418  
HUMAN 360 FGSIVALKELDMHGIFFRSLDETTLPRLRLPMLQTLRLQMFINQALGIFRAFPGLRY 419  
MOUSE 360 FKNLVSLQELNMHGIFFRSLNKYTLFWLADLPKLHLHLQMFINQALSIQFCTFRLRF 419  
CAT 360 FGSLLSLQQLDMHGIFFRSLSETTLRLVHLPLQSLHLQMFINQALSIQFAGFPGLRY 419  
\* \* \* \* \*  
SWINE 419 VDLSDNRISGAARPAVITREVDGR-ERWVLPRLAPRPLDILRSEDFMPCNAKAFSFTILD 477  
HUMAN 420 VDLSDNRISGAELTATMGADGG-EKVMVLPQGLAPAPVDPSPSEDFRNCSTINFTILD 478  
MOUSE 420 VDLSDNRISGSPSTLSEATPEEADDAEQEELLSADHPAPLSTPASKNFMDRCKNFKFTMD 479  
CAT 420 VDLSDNRISGAMELAAATGEVDGG-ERVRLPRLGDLALGPPGIPSPSEGMPCGKTINFTILD 478  
\*\*\*\*\*  
SWINE 478 LSRNMLVTIQSEMFARLSRLECRLSHNSISQAVNGSQFVPLTSLRLVLDLSHNKLDLYHG 537  
(SEQ ID NO:2 299-537)  
HUMAN 479 LSRNMLVTIQPEMFAQLSHLQCLRLSHNCISQAVNGSQFLPLTGLQVLDLSRNKLDLYHE 538  
(SEQ ID NO:4 300-538)  
MOUSE 480 LSRNMLVTIKPEMFVNLRLQCLSLSHNSIAQAVNGSQFLPLTNLQVLDLSHNKLDLYHW 539  
(SEQ ID NO:6 300-539)  
CAT 479 LSRNMLVTIQPEMFARLSRLOCLLSRNSISQAVNGSQFMPLTSLQVLDLSHNKLDLYHG 538  
\*\*\*\*\*  
(SEQ ID NO:8 300-538)

## FIG. 8

SWINE	538	RSFTETLPRIEALDLSYNSQPFIMQGVGHNLSFVAQLPALRYLSLAHNDIHSRVSQQLCCA	597
HUMAN	539	HSFTETLPRIEALDLSYNSQPFIMQGVGHNLSFVAHLRTLAHLSLAHNNIHSQVSQQLCCT	598
MOUSE	540	KSFETLPQLQALDLGNSQPFSSIKGIGHNFSEVAHLSMLHSLSLAHNDIHSRVSSHINEN	599
CAT	539	RSFTETLPRIEALDLSYNSQPFIMQGVGHNLSFVAQLPALRYLSLAHNDIHSRVSQQLCCA	598
* *			
SWINE	598	SLCALDFSGNDLSRMWABGDLYLRFQGLRSLWLDLSQNHILHTLPRALDNLPKSLKHL	657
HUMAN	599	SLRALDFSGNALGHMWABGDLYLHFFQGLSGLIWLDSQNRILHTLPQTLNLPKSLQVL	658
MOUSE	600	SVRFELDFSGNGVGRMWABGGGLYLHFFQGLSGLIKLDSQNLHILPPQNLNLPKSLKLL	659
CAT	599	SLRALDFSGNALSRMWABGDLYLHFFQGLRSLWRDLSQNRILHTLPRITLNLPKSLRL	658
* *			
SWINE	658	HLRDNNAFFNWSLTLPKLETLDLAGNQLKALNGSLPSGTQLRRDLSSNGISGFVNP	717
HUMAN	659	RLRDNYLAFFNWSLHFLPKLEVLDAQNRLKALNGSLPAGTLRLRLDVSNISSEFVAP	718
MOUSE	660	SLRDNYLSEFNWLSLFLPNLEVLDAQNQLKALNGSLPAGTLRLRLDVSNISSEFVAP	719
CAT	659	RLRDNYLAFFNWSLWLLPRIEALDLAGNQLKALNGSLPAGTQLRRDLSSNISSEFVAS	718
* *			
SWINE	718	GFALAKQLEHINLSANALKTVEPSWFGSMGNLKVLDVSNPLHCACGATFVGFLEVQ	777
HUMAN	719	GFESKAKELREINLSANALKTVDHSWFGPIASALQILDVSNPLHCACGAFFDFLEVQ	778
MOUSE	720	AFALAVEIKVNLHNLKTVDRSWFGPIVNLTVLDRSNPLHCACGAFFDILLEVQ	779
CAT	719	SEFALATRLREINLSANALKTVEPSWFGSLAGTLKVLDVTGPIPLHCACGAFFDFLEVQ	778
* *			
SWINE	778	AAVPGLPSPVKCGSPQQLQCHSIFAQDLRLCLDETLSWCFGLSLIAVALGLVPMHLHL	837
(SEQ ID NO:2 538-837)			
HUMAN	779	AAVPGLPSPVKCGSPQQLQGLSIFAQDLRLCLDEALSWCFGLSLIAVALGLVPMHLHL	838
(SEQ ID NO:4 539-838)			
MOUSE	780	TKVPGLANGVKCGSPQQLQGRSIFAQDLRLCLDEVLSWCFGLSLIAVAVGMPILHLHL	839
(SEQ ID NO:6 540-839)			
CAT	779	AAVPGLPGHVKCGSPQQLQGRSIFAQDLRLCLDEALSWCFGLSLITVALGLVPMHLHL	838
* *			
(SEQ ID NO:8 539-838)			

## FIG. 9

SWINE	838	CGNDLWYCFHLCLAWLPHRGQRRGAD--ALPYDAFWFDKAQSAVADWVYNEIRVQLEER	895
HUMAN	839	CGNDLWYCFHLCLAWLPHRGQSCFDEDALPYDAFWFDKTKQSAVADWVYNEIRGQLEEC	898
MOUSE	840	CGADVWYCFHLCLAWLPLLARSRSQA-LPYDAFWFDKAQSAVADWVYNEIRVLEGR	898
CAT	839	CGNDLWYCFHLCLAWLPHRGQRRGAD--ALPYDAFWFDKAQSAVADWVYNEIRVLEER	896
**** ***** .. . . . * ***** ***** **			
SWINE	896	RCRRALRLCLEERDWLPGKTLFENLWASVYSSRKTLFVLAHTDRVSGLLRASFLLAQQL	955
HUMAN	899	RCRWALRLCLEERDWLPGKTLFENLWASVYGSRKTLFVLAHTDRVSGLLRASFLLAQQL	958
MOUSE	899	RCRRALRLCLEERDWLPGKTLFENLWASTYGSRKTLFVLAHTDRVSGLLRTSFLLAQQL	958
CAT	897	RCRRALRLCLEERDWLPGKTLFENLWASVYSSRMLEFVLAHTDRVSGLLRASFLLAQQL	956
*** ***** ***** * *** ***** *****			
SWINE	956	LEDKDWVWLILRPDAYRSRYVRLRQLRCQSVLLWPHQPGQGSFWAQLGTALTRNR	1015
HUMAN	959	LEDKDWVWLILSPDGRPSRYVRLRQLRCQSVLLWPHQSGQGSFWAQLGTALTRNH	1018
MOUSE	959	LEDKDWVWLILRPDAHPSRYVRLRQLRCQSVLFWPQQPNQGGFWAQLGTALTRNR	1018
CAT	957	LEDKDWVWLILRPDAHPSRYVRLRQLRCQSVLLWPHQSGQGSFWAQLGTALTRNQ	1016
***** ** ***** ** ** * *****			
SWINE	1016	HFYNRNFCRCPTTAE (SEQ ID NO:2 838-1030)	1030
HUMAN	1019	HFYNRNFCRCPTTAE (SEQ ID NO:4 839-1032)	1032
MOUSE	1019	HFYNRNFCRCPTTAE (SEQ ID NO:6 840-1032)	1032
CAT	1017	HFYNRNFCRCPTTAE (SEQ ID NO:8 839-1031)	1031
**** ** **			